

WHAT IS CLAIMED IS:

*Duvalay* 1. A method of updating parity data in a redundant array of independent disk  
2 (RAID) clustered environment comprising:  
3     (a) locking parity data, without communicating with other nodes, for data  
4 managed in SCSI (small computer systems interface) disks in a RAID clustered system,  
5 wherein the locking prevents other nodes from modifying the parity;  
6     (b) reading the parity data;  
7     (c) generating new parity data by exclusive oring data from a first node and a  
8 second node;  
9     (d) writing the parity data to a SCSI disk in the RAID system; and  
10     (e) unlocking the parity data.

1     2. The method of claim 1, wherein the locking comprises issuing a RESERVE  
2 command.

*Duvalay* 3. The method of claim 1, wherein the unlocking comprises issuing a RELEASE  
2 command.

1     4. The method of claim 1, wherein the locking and reading steps are combined.

1     5. The method of claim 1, wherein the writing and unlocking steps are  
2 combined.

*Duvalay* 6. The method of claim 1 wherein the RAID system is RAID-4.

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The method of claim 1 wherein the RAID system is RAID-5.

8. The method of claim 1 wherein the RAID system is RAID-6.

1 9. An apparatus for updating parity data in a redundant array of independent  
2 disk (RAID) clustered environment comprising:

3 (a) a plurality of SCSI (small computer systems interface) storage devices  
4 organized in a RAID clustered system;

5 (b) data stored in the plurality of SCSI storage devices;

6 (b) a first node, operatively coupled to the SCSI storage devices, that manages  
7 storage and retrieval of the data in the data storage devices, wherein the first node is  
8 configured to:

9 (i) lock parity data without communicating with other nodes, wherein  
10 the lock prevents other nodes from modifying the parity;

11 (ii) read the parity data;

12 (iii) generate new parity data by exclusive oring data from two nodes;

13 (iv) write the parity data to a SCSI disk in the RAID system; and

14 (v) unlock the parity data.

1 10. The apparatus of claim 9, wherein the first node locks the parity data by  
2 issuing a RESERVE command.

1 11. The apparatus of claim 9, wherein the first node unlocks the parity data by  
2 issuing a RELEASE command.

12. The apparatus of claim 9, wherein the first node is further configured to  
2 combine the logic for locking and reading.

13. The apparatus of claim 9, wherein the first node is further configured to  
2 combine the logic for writing and unlocking.

14. The apparatus of claim 9 wherein the RAID system is RAID-4.

15. The apparatus of claim 9 wherein the RAID system is RAID-5.

16. The apparatus of claim 9 wherein the RAID system is RAID-6.

17. An article of manufacture, embodying logic to perform method steps of  
2 updating parity data in a redundant array of independent disk (RAID) clustered  
3 environment, the method steps comprising the steps of:

- 4 (a) locking parity data without communicating with other nodes, wherein the  
5 locking prevents other nodes from modifying the parity;
- 6 (b) reading the parity data;
- 7 (c) generating new parity data by exclusive oring data from two nodes;
- 8 (d) writing the parity data to a SCSI (small computer systems interface) disk in  
9 the RAID system; and
- 10 (e) unlocking the parity data.

18. The article of manufacture of claim 17, wherein the locking comprises  
2 issuing a RESERVE command.

*Draft*  
2 19. The article of manufacture of claim 17, wherein the unlocking comprises

issuing a RELEASE command.

1 20. The article of manufacture of claim 17, wherein the locking and reading steps  
2 are combined.

1 21. The article of manufacture of claim 17, wherein the writing and unlocking  
2 steps are combined.

1 22. The article of manufacture of claim 17 wherein the RAID system is RAID-4.

1 23. The article of manufacture of claim 17 wherein the RAID system is RAID-5.

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2 24. The article of manufacture of claim 17 wherein the RAID system is RAID-6.